REMARKS FOR ADMINISTRATOR BOLDEN

DOT/FAA Commercial Space Transportation Advisory Committee

(COMSTAC)

May 11, 2011

George, thank you for inviting me to return to COMSTAC even though I threw my prepared remarks away last year. This time – for the benefit of the media representatives here who may need formal statements to spin – I do intend to refer to my notes for most of my remarks and will make them available on our NASA website immediately following this event as we usually do.

In meetings and informal conversations with many of you, I am frequently queried on my strategy for NASA – more specifically – my strategy for exploration. As I'm certain most – if not all – of you know, the current *U.S. National Space Transportation Policy (2005)* states that a "…fundamental goal of this policy is to ensure the capability to access and use space in support of national and homeland security, civil, scientific, and economic interests." In his preamble statement to the current *National Space Policy* dated June 28, 2010, President Obama's statement from his space policy

address at the Kennedy Space Center on April 15, 2010 is quoted: "Fifty years after the creation of NASA, our goal is no longer just a destination to reach. Our goal is the capacity for people to work and learn and operate and live safely beyond Earth for extended periods of time, ultimately in ways that are more sustainable and even indefinite."

It is my intention to broaden our scientific portfolio, enhance our aeronautics research and technology development efforts, and facilitate the development and success of a vibrant commercial space industry to provide for access of cargo and crew to the ISS and other low Earth orbit destinations. We will do these things because they are all necessary to make it possible for NASA to develop a capability to expand our human presence beyond LEO and realize the goal expressed by President Obama and other Presidents before him to permit humans to work, learn, operate and live safely beyond Earth for extended periods of time.

What is different from previous administrations is that within a year or less, we plan to move toward resupply of the International Space Station (ISS) using a mixed fleet of vehicles from U.S. domestic commercial providers and our international partners. Within the next few years our plan will

mature to utilization of commercial launch services to transport crew to and from the ISS. These capabilities are critical to sustain full operations and utilization of the ISS through its planned operational life until at least 2020. They will also be vital to enabling NASA to focus our efforts on undertaking and achieving the difficult challenges of resuming and expanding human exploration beyond LEO and well beyond our most distant destination reached to date – the Moon. Thus, commercial space transportation is a vital part of NASA's strategy for exploiting the promise of our broad portfolio of science, technology development, aeronautics advancement, and human and robotic exploration.

My first priority is always going to be ensuring the safely of our astronauts and international partners traveling to and from as well as while aboard the ISS, and a key part of that will be more than one way of reliably accessing low Earth orbit. I need to stress the difference between cargo and crew transport. Our risk tolerance is obviously much higher for cargo. When we procure crew transport services, NASA will have the ultimate responsibility for certifying future crewed missions on commercial rockets. We believe that if we can work with our contractors to make the NASA human transport missions safe and effective, that is our best contribution to safe and

effective, and therefore profitable, operations for these industry partners in the future.

The President's 2012 budget request boosts funding for our partnership with the commercial space industry and prioritizes our efforts to ensure that American astronauts and the cargo they need are transported by American companies rather than continuing to outsource this work to foreign governments. This new approach in getting our crews and cargo into orbit will create good jobs and expand opportunities for American workers. If we are to win the future and out build our competitors, it's essential that we make this program a success.

We just celebrated the first flight of Project Mercury and Alan Shepard's history-making ascent into space 50 years ago. Industry partners were there from the beginning. Our emphasis on expanded commercial capabilities is going to help us achieve our broader mission, which encompasses the fullness of our work in human spaceflight kicked off by Alan Shepard aboard Freedom 7. These capabilities – once fully developed and mature - will also benefit our national security, intelligence,

and economic interests as these capabilities support scientific research, technology development, and further exploration initiatives.

NASA doesn't build rockets in-house; we never have. While we've done a lot of design, development, testing and certification in-house, we didn't manufacture the operational rockets. In the future, we'll still contract with industry to design and build against our standards and will oversee manufacturing and flight tests and, finally, certify crewed NASA launches. But, I must again emphasize – we have no intent to compete with commercial entities for access to low Earth orbit.

I tell people this agency needs to do two things: provide reliable, safe, routine access to LEO, and conduct exploration beyond LEO. NASA will depend on the capabilities and talents of companies represented in this room to provide LEO access for cargo and crew. We will take on the difficult and more risky challenges of deep-space exploration.

Back at the dawn of the space age, getting a human into space was too risky, too costly, for any company to take on by itself. Today, that is changing. We've learned a lot in the past five decades, and we've been

able to pass much of that on to our commercial partners in the form of our human rating requirements and safety lessons learned. Since they've been working hand in hand with us, they've learned a lot, too.

While we have had commercial access to space for non-human payloads for many years, we, with our industry partners, had to provide the access to low Earth orbit for years because there was no stand-alone industry capability. But now we're facilitating that capability through a number of different mechanisms, and our partners are steadily achieving required milestones on their way to carrying first ISS cargo - then crew to LEO in a safe, reliable, and cost-effective way.

We're talking about many companies in the mix here – both well established and up-and-comers. They all have different approaches, different systems – none mandated by NASA. We also want to support the associated technologies and capabilities that will be necessary to ensure that this commercial sector of the economy grows and thrives and can respond to changes.

When NASA retires the space shuttle after STS-135, we want to bring on a U.S. capability to ensure the next stage of human spaceflight as early as possible. We need industry in that endeavor. This will help make possible a wide array of objectives and capabilities that not only NASA, but also many other stakeholders, wants to achieve in space. We don't intend to be the only customer for LEO access. Other government agencies as well as other nations, academia, business are going to need these capabilities.

I'm not saying it's going to be easy, because it will take a lot of hard work. Safety is now and will remain paramount! We must apply the lessons learned – many the hard way – to the designs and operations of the future in order to minimize the potential for loss of life. Commercial space providers will need to learn and practice the delicate balance between safety, schedule, and revenue. Safety is my number one priority as well as that of the Agency and our partners' work, and ours as well, will be tougher as we move beyond the cargo demonstrations into human ratings requirements.

But this is work we're willing to take on -- the partnership and oversight. And I know it's work that industry is enthusiastic about and is already taking

on with us. This activity is not a trivial experiment. Commercial cargo is absolutely required for effective operation of the International Space Station. We will work with industry to help them step up to this critical capability.

With passage of the NASA Authorization Act of 2010 and the subsequent passage of the 2011 full-year CR, a lot of uncertainties were cleared up for NASA about our future direction. One thing we've been able to do recently is make a second round of awards in our Commercial Crew Development (CCDev) program. The four winning companies again represented a range of sizes and philosophies. They are each pursuing their own visions for crew transportation systems, launch abort and safety systems, and the supporting technologies that will make all of this possible.

These and many other companies both large and small are a big part of the future of exploration. . . .and they are going to help deliver that future by out-innovating, out-educating and out-building their competition around the world.

We also have an ongoing commitment to the Commercial Orbital Transportation Services initiative – a program where the country is poised to gain access to two new launch vehicles, two new spacecraft, and two end-to-end systems – from Orbital and SpaceX -- capable of delivering cargo to the ISS, all for a very modest financial investment on our part. These two launch vehicles will be potentially extremely useful to our science programs.

Again, at the heart of it, this is not new stuff. The Space Act that founded NASA in 1958 requires us to use commercial services to the extent feasible.

The U.S. National Space Policy adopted last year by President Obama maintains as one of its key principles that, "A robust and competitive commercial space sector is vital to continued progress in space. The United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports American needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship."

In addition, one of the Space Policy's stated goals is to: "Energize competitive domestic industries to participate in global markets and advance the development of satellite manufacturing; satellite-based services; space launch; terrestrial applications; and increased entrepreneurship." The 2010 NASA Authorization Act consolidates these broad directives into a specific roadmap that is giving rise to real actions through the 2011 full-year CR.

All of this brings NASA in line with a reinvigorated national focus on "capability creation" on the research and development and testing that will advance our priorities from where we are today and give us payoffs in the out-years, allowing future generations to have much greater capabilities to explore.

You can see real-time how commercial space capability is expanding all around us. I was recently at the ribbon cutting at our Wallops Flight Facility for a commercially owned horizontal integration facility, the first customer of which will be Orbital Sciences for its Taurus II rocket. Wallops, the Mid-Atlantic Regional Spaceport and Orbital Sciences Corporation have been

working together to bring the Taurus II vehicle to the launch pad this coming fall under tough mission schedules.

Spaceport America has been inaugurated out in New Mexico. The Kennedy Space Center is poised for upgrades to make it the 21st century launch complex we want it to be to attract more business and increase its flexibility.

Our Stennis Space Center in Mississippi continues to provide test facilities and services for the AJ26 engine that will power Orbital's Taurus II to the ISS and as well as for other government and commercial missions. In partnership with Aerojet, Orbital is reaching for new heights and moving closer to providing that vital cargo delivery service to the station.

I think most people in this room were as excited as we were in December when SpaceX became the first company in history to launch a capsule to space, orbit Earth and safely retrieve it intact. And we want to thank the FAA for granting the first commercial re-entry license in history to make that mission a reality.

All across the country recently, my deputy Lori Garver and I have visited amazing facilities such as Bigelow Aerospace, Blue Origin, Sierra Nevada, Boeing and other companies like them that are thinking big and turning their innovative philosophies into hardware and capabilities.

We're committed to a commercial space industry at NASA. In the long run, it's going to increase our human spaceflight capabilities; it's going to strengthen our leadership position in space exploration as it provides us with multiple, redundant, reliable capabilities to access space; and it's going to stimulate the economy and create a job-producing engine for America.

I believe all of these things are going to happen. They're underway right now, and we're helping to make them so.

What I want for the future is for all of us, those of us with skin in the game -- NASA and the companies working on these capabilities, and the people who will be using the services -- to talk to each other and thoroughly debate the issues that will confront us on this path we have now chosen. We need to really dig into the human rating standards for commercial transport

systems, for instance, and make them reasonable but still rigorous because safety is paramount and our standards have to be clear, concise, and understandable.

Like I said, there's a lot of work to do, but these are very exciting times and the work ahead will be exciting and rewarding. We are now on the verge of a new era of exploration, and we are happy at NASA to have so many energetic and entrepreneurial partners helping us to create what I believe will be a very bright future. I sincerely hope all of you want to be a part of that future.

Thank you and you’re welcome to ask any questions you may have.